



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/889,113	07/11/2001	Katsuhiro Mochizuki	1232-01	7939
35811	7590	01/13/2005	EXAMINER	
IP GROUP OF DLA PIPER RUDNICK GRAY CARY US LLP 1650 MARKET ST SUITE 4900 PHILADELPHIA, PA 19103			BOYD, JENNIFER A	
			ART UNIT	PAPER NUMBER
			1771	

DATE MAILED: 01/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/889,113	MOCHIZUKI ET AL.	
	Examiner Jennifer A Boyd	Art Unit 1771	

-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 20 October 2004.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-9,12-19,21,22 and 24-28 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-9,12-19,21,22 and 24-28 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
5) Notice of Informal Patent Application (PTO-152)
6) Other: _____

DETAILED ACTION

Response to Amendment

1. The Applicant's Amendments and Accompanying Remarks, filed October 20, 2004, have been entered and have been carefully considered. Claims 1 and 15 are amended, claims 10 – 11, 20, and 23 are cancelled, claims 24 – 28 are added and claims 1 – 9, 12 – 22 and 24 – 28 are pending. In view of Applicant's Amendments, the Examiner withdraws the rejection of claims 15 – 19 and 21 – 23 as detailed in paragraph 6 of the previous Office Action dated April 20, 2004. It should be noted that the rejection of claims 1 – 9 and 12 – 13 as being unpatentable over Fujimoto is maintained and is amended below for clarity and to include the rejections of new claims 25 – 28. Despite these advances, the invention as currently claimed is not found to be patentable for reasons herein below.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

3. Claims 1 - 14 remain rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The details of the rejection can be found in paragraphs 2 - 3 of the previous Office Action dated February 5, 2003. The rejection is maintained.

4. Claim 21 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
5. Claim 21 recites the limitation "the textured roll" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

6. Claims 1 – 9, 12 – 13 and 25 – 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimoto (EP 1033422A1).

As to claim 1, Fujimoto teaches a polyester fiber comprising 90% or more by weight of a poly(trimethylene terephthalate) (Abstract). Fujimoto teaches that the fiber of the present invention is preferably in the form of a multifilament yarn (section [0025]). Fujimoto teaches that the elastic modulus range, or Young's modulus, acceptable for the fiber is from 17 to 30 g/d (15.02 – 26.50 cN/dtex), which overlaps the Applicant's range of no more than 25 cN/dtex (section [0023]).

As to claim 2, Fujimoto teaches that the elastic modulus range, or Young's modulus, acceptable for the fiber is from 17 to 30 g/d (15.02 – 26.50 cN/dtex), which overlaps the Applicant's range of no more than 22 cN/dtex (section [0023]).

As to claim 7, Fujimoto teaches that the boil-off shrinkage is preferably from 7 – 14%, more preferably from 8 – 12%, which overlaps the Applicant's range of 3 – 15% [0018].

As to claim 13, Fujimoto teaches that the individual filament size is from 0.1 to 10 denier (0.556 – 11.1 dtex), preferably from 0.5 – 5 denier (0.55 – 5.56 dtex), which overlaps the Applicant's range of no more than 3 dtex (section [0025]).

As to claim 25, Fujimoto teaches a polyester fiber comprising 90% or more by weight of a poly(trimethylene terephthalate). Fujimoto teaches that the polyester comprises terephthalic acid as the acid component and 1,3-propanediol as the diol component (section [0014]).

As to claims 26 - 27, Fujimoto teaches that the poly(trimethylene terephthalate) may comprise other copolymer components such as succinic acid, adipic acid and 1,4-cyclohexanedimethanol (section [0014]).

As to claim 28, Fujimoto teaches that the fabrics comprises the poly(trimethylene terephthalate) fiber may be dyed (section [0050]), implying the presence of coloring pigments.

As to claims 1 and 12, Takahashi discloses the claimed invention except for that CF value of 1 – 30 as required by claim 1 and the CF value is 5 – 25 as required by claim 12. It should be noted that CF is a result effective variable. For example, as the CF value increases, the breakage rate of the yarn increases. It would have been obvious to one having ordinary skill in the art at the time the invention was made to create a yarn with CF value of 1 – 30 as required by claim 1 and the CF value is 5 – 25 as required by claim 12 since it has been held that where general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 220 F.2d 454 USPQ 233 (CCPA 1955). In the present invention, one would have been motivated to optimize the CF value of the yarn in order to create a stable and strong yarn with high resistance to breakage.

As required by claim 1, Fujimoto fails to teach the strength being at least 3 cN/dtex, the minimum value of the differential Young's modulus at 3 – 10% extension is no more than 10 cN/dtex, the elastic recovery following 10% elongation is at least 90% and the CV value of continuous shrinkage in the yarn lengthwise direction is no more than 4%. As to claim 3, Fujimoto fails to teach that the differential Young's modulus at 3 – 10% extension is no more than 5 cN/dtex. As to claim 4, Fujimoto fails to teach that the residual extension is at least 45%. As to claim 5, Fujimoto fails to teach that the elastic recovery following 10% elongation is at least 95%. As to claim 6, Fujimoto fails to teach that the degree of crystallinity is at least 30%. As to claim 7, Fujimoto fails to teach that the maximum value of shrinkage is no more than 0.3 cN/dtex at a temperature of at least 120 degrees Celsius. As to claim 8, Fujimoto fails to teach that the maximum value of the shrinkage stress is 0.15 to 0.25 cN/dtex. As to claim 9, Fujimoto fails to teach that the maximum value of shrinkage stress is shown at least 130 degrees Celsius. Although Fujimoto does not explicitly teach the claimed properties as described above, it is reasonable to presume that the said properties are inherent to Fujimoto. Support for said presumption is found in the use of like materials (i.e. a multi-filament yarn comprising polytrimethylene terephthalate subjected to a relaxation heat treatment), which would result in the claimed properties. The burden is upon the Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594. In addition, the presently claimed properties mentioned above would obviously have been present once the Fujimoto product is provided. Note *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977).

7. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimoto (EP 1033422A1) in view of Matsuo (JP 11-100747). The rejection is maintained. The details of the rejection can be found in paragraph 9 of the previous Office Action dated February 5, 2003.

8. Claims 15 – 19, 21 – 22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al. (US 4,956,446).

Takahashi is directed to the manufacturing of a polyester fiber (Title and column 4).

As to claim 15, Takahashi teaches that the polyester fiber with an intrinsic viscosity in the range of 0.70 – 1.05 dl/g (column 3, lines 25 – 35) is manufactured by melting polyester of high viscosity, spinning at a speed of about 1000 – 5000 m/min without taking up, drawn while heating with a heated roller and then led to the relaxation roller to impart limited shrinkage (column 4, lines 30 – 68 and column 5, lines 1 – 5). After the relaxation treatment, the yarn is subjected to a commingling process equated to Applicant's "interlacing treatment" and then taken up by a take up apparatus (column 5, lines 1 – 5). As shown in Example 1, the relaxation heat treatment can be performed at 100 or 150 degrees Celsius while relaxing at a relaxation ratio of 7.0 – 11.5%, equated to Applicant's "relaxation factor".

As to claim 16, Takahashi teaches that the polyester fiber with an intrinsic viscosity in the range of 0.70 – 1.05 dl/g (column 3, lines 25 – 35).

As to claim 18, Takahashi teaches a spinning at a speed of about 1000 – 5000 m/min without taking up (column 4, lines 30 – 68).

As to claim 19, Takahashi teaches in Example 1 that the relaxation ratio is 7.0 – 11.5%, equated to Applicant's "relaxation factor".

Takahashi discloses the claimed invention except for that the polyester fiber used is polytrimethylene terephthalate. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the process of Takahashi to make a polytrimethylene terephthalate yarn since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of design choice. *In re Leshin*, 125 USPQ 416. In the present invention, one would have been motivated to create a yarn comprising polytrimethylene terephthalate due to its high resilience, stain resistance and dyeability properties.

As to claims 15, 17, 21 and 22, Takahashi discloses the claimed invention except for that the drawing is performed at a low draw rate, the roll has a surface roughness of 1.5 S – 8S and CF value of 1 – 30 as required by claim 15, the melt spinning temperature is performed at a temperature 20 – 50 degrees Celsius higher than the melting point as required by claim 17, the textured roll has a surface roughness of 3.2S – 6.3S as required by claim 21 and the drawing temperature is 10 – 50 degrees Celsius higher than the glass transition point as required by claim 22. It should be noted that the draw rate, roll surface roughness, CF value, melt spinning temperature and the drawing temperatures are result effective variables. For example, the draw rate directly affects the crystallinity of the resulting fiber. The level of surface roughness of the roll directly affects the stability of the fiber during the heat stabilizing and relaxation process. As the CF value increases, the breakage rate of the yarn increases. The spinning and drawing temperatures determine the stability and the amount of yarn breaks during manufacturing. It

would have been obvious to one having ordinary skill in the art at the time the invention was made to the drawing is performed at a low draw rate, the roll has a surface roughness of 1.5 S – 8S and CF value of 1 – 30 as required by claim 15, the melt spinning temperature is performed at a temperature 20 – 50 degrees Celsius higher than the melting point as required by claim 17, the textured roll has a surface roughness of 3.2S – 6.3S as required by claim 21 and the drawing temperature is 10 – 50 degrees Celsius higher than the glass transition point as required by claim 22 since it has been held that where general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 220 F.2d 454 USPQ 233 (CCPA 1955). In the present invention, one would have been motivated to optimize the draw rate, the roll surface roughness, CF value and the drawing and spinning rates of the yarn in order to create a stable and strong yarn with high resistance to breakage.

As to claim 24, Takahashi fails to teach that the polyester yarn has a strength from a stress/strain curve of at least 3cN/dtex and a residual extension of at least 42%. Although Fujimoto does not explicitly teach the claimed properties as described above, it is reasonable to presume that the said properties are inherent to Fujimoto. Support for said presumption is found in the use of like materials (i.e. a multi-filament yarn polyester yarn made by melting polyester of high viscosity, spinning at a speed of about 1000 – 5000 m/min without taking up, drawn while heating with a heated roller and then led to the relaxation roller to impart limited shrinkage. After the relaxation treatment, the yarn is subjected to a commingling process and then taken up) which would result in the claimed properties. The burden is upon the Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594. In addition, the presently claimed properties

mentioned above would obviously have been present once the Takahashi product is provided.

Note *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977).

Response to Arguments

9. Applicant's arguments filed October 20, 2004 have been fully considered but they are not persuasive.

10. In response to Applicant's arguments that claims 1 – 14 are in compliance with 35 USC 112, the Examiner respectfully argues the contrary. The only chemical and structural limitations in claim 1 is a multi-filament yarn comprising polytrimethylene terephthalate with a CF value of 1 - 30. The other limitations of claim 1 such as strength, Young's modulus, elastic recovery and CV value are properties which a direct result of chemical and structural limitations. Therefore, if the Applicant believes that the properties of his invention such as the strength, Young's modulus and elastic recovery of the polytrimethylene terephthalate yarn differ from the yarn of Fujimoto, the Applicant must recite the additional chemical and structural limitations which differentiates his invention from Fujimoto or any other invention that comprises a multifilament polytrimethylene yarn and include those limitations in claim 1. If the said properties are not inherent, it is asserted that the claim must be incomplete. In other words, if the Applicant asserts a lack of inherency in the admitted prior art, then the Applicant's claimed invention is missing an element critical to the invention which would patentably distinguish it from the known prior art. Additionally, claims 2 – 14 are dependent on claim 1 and do not add sufficient chemical and structural limitations to differentiate it from Fujimoto. Therefore, the Examiner assumes

inherency for those physical properties as well until the Applicant chemically or structurally differentiates his invention which would provide for the set forth physical limitations.

11. In response to Applicant's argument that the process steps of claim 15 directly affect the physical characteristics of the product of claim 1, the Examiner respectfully argues that claim 1 and claim 15 are distinct independent claims. If the Applicant requires that the product of claim 1 is made by the process of claim 15, the Applicant should amend the claims accordingly.

12. Applicant's arguments with respect to claims 15 – 19 and 21 – 23 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

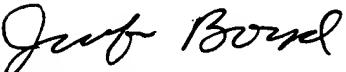
13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A Boyd whose telephone number is 571-272-1473. The examiner can normally be reached on Monday thru Friday (8:30am - 6:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jennifer Boyd
January 6, 2005